DOCUMENT RESUME

ED 286 487 IR 012 821

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TITLE Open Portal Schools: The Real Impact of Computer-Based Education.
PUB DATE 87
NOTE 14p.; Paper presented at the Annual Meeting of the American Educational Research Association (Washington, DC, April 20-24, 1987).
PUB TYPE Viewpoints (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; Conventional Instruction; Day Care; Distance Education; Educational Administration; *Educational Trends; Elementary Secondary Education; Experiential Learning; *Futures (of Society); Individual Differences; Teacher Role; *Teleconferencing

ABSTRACT

The model for the school of the future that is suggested in this paper is based on the imaginative application of computer and information technologies. Four major functions are identified for this imaginary school: (1) administration--academic recordkeeping for all citizens; (2) the Open Portal Local Node--teleconference-based classes available at home and at other facilities throughout the community; (3) face-to-face curriculum--studios, stages, workshops, laboratories, gardens, and gyms; and (4) traditional classrooms. The changing role of the teacher is discussed, and supporting social institutions such as enhanced childcare facilities and home-based employment are described. (MES)

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- OPEN PORTAL SCHOOLS -

The Real Impact of Computer-Based Education

by

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Educational Research,
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Learning Options * Open Portal

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IR012821

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Open Portal Schools: The Real Impact of Computer-Based Education

by Liza Loop

ABSTRACT

This paper, one of the background documents for the 1987 American Educational Research Association Annual Meeting Symposium, "VISIONS OF FUTURE SCHOOLS - AD 2010," suggests a new model for schools made feasible by the imaginative application of computer and information technologies. Schools, as institutions, perform four separate functions: administration (academic record-keeping for ALL citizens), Open Portal Local Node (teleconference-based classes available at homes and other facilities throughout the community), Face-to-face curriculum (studios, stages, workshops, laboratories, gardens and gyms), and Traditional Classrooms. Supporting social institutions including enhanced childcare facilities and home-based employment round out this altogether possible scenario.

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Hear the word SCHOOL, and we do hear it every day - what pictures flash into your mind? A building? A classroom? Ditto sheets? Thirty students all trying to get your attention at once? If you are a very "modern" educator, perhaps there is a computer somewhere in the background of your picture. But even for those of us who do use computers for learning, this new technology usually serves as a means of doing the same old thing with a little less drudgery. Most of us use the computer to process classroom data (grades, attendance, etc.), to replace the ditto sheet for student drill & practice, or as the "lab" for courses in programming. In isolated cases students may be able to take a whole course, from introductory lesson to final exam, from a computer terminal in the media center. But today a school is still a place. How could it be otherwise?

JOURNEY INTO THE FUTURE

Let's take an imaginary journey into the future. Say, Fall of 1990. Styles have changed a little. Our old haunts are a bit more crowded, but people and buildings look very much the same. We wander onto the campus of the elementary school where we used to work. The grounds are better kept than we remember, there's a garden in the side yard now, and a surprising number of children are on the playground at this midmorning hour. We peek into a classroom - orchestra rehersal going on, must be the music room. Behind another door we find a busy woodshop. The next room has

been divided into cubicals and seems to be used for individual counseling.

As we continue to snoop around we find students in science labs, art studios, a fine gymnasium and a theatre. There is an excellent library with plenty of books, tapes, film strips, and videodisks. There is also an impressive computer center with the lastest high-resolution graphics display screens, fancy printers, several large hard disks, and a seeming oversupply of phone and cable TV lines coming in.

Toward the rear of the school we discover our first traditional classroom. There is a favorable student/teacher ratio, and yet the children seem restless and so we assume this is a "special" class for learning disability students. The next few rooms give the opposite impression - orderly, on-task, highly motivated children who seem to enjoy being together and working in the classroom environment. It reminds us of the "gifted" classes of the '70's.

Discussing our findings, we head toward the office. There are far too few children here we concur. And the age spread is too wide...kindergarten through tenth, at least. Where are they all? The office holds the biggest shock of all. It is a model "office of the future" - computers on every desk, hardly any paper, and the sign indicates that it serves the whole district,

not just one elementary school.

CHANGING SCHOOL FUNCTIONS

The principal invites us to relax in his office while he unravels the mystery for us. This former elementary school has become a **combination campus.** It has four separate functions: Administrative Records; Open Portal Local Node; Face-to-face Curriculum; and Traditional Classrooms.

Administration

The administrative office handles the educational data processing for all citizens in this district - that's right - all citizens. Everyone is enrolled on the day they are born and they may continue throughout their lives. Children, of course, have certain minimum requirements to meet but adults may drop in and drop out as often as they please. The Department of Public Education now offers instruction at all levels: prenatal training, infant care and stimulation for parents, basic citizen curricula for children ages 2 through 17; employment preparation; and recreational learning. Improvements in electronic record keeping make this relaxed attitude toward attendance, grades, transcript preparation, and scheduling possible. It now costs about the same to provide these services for everyone that it did for just children in 1980. Your academic record, like your

medical history, stays with you and is available to you and those you send it to via electronic mail at any time. Job changes, retraining, sebaticals for employees, and shared jobs are common. Thus "going to school" is now a national passtime, not just a chore for the young.

Open Portal

Most traditional school subjects are offered on the Open Portal. This is a large computer network which can be accessed from homes, libraries, day care centers, and public facilities around town. The last ten years have seen an explosion in the availability of powerful, low-cost computer equipment and a corresponding software development effort. Learning games, tutorials, drill & practice, competency testing, and data banks for research of every description can be called up from the Open Portal. Sometimes the link uses a telephone, sometimes cable TV, in outlaying areas two-way radio carries data between the individual learning station and the computer center. A person can work individually, be a member of a group which exchanges messages over time, or join a conversation among several people simultaneously. The computer center on campus supports these activities for the local community. It also serves as a communications link for connecting to individuals and universities across the country.

Intelligent TV

The most common household computer is the "intelligent TV". This device consists of a normal Television receiver, a tiny but powerful microcomputer and a "disk player" for recording and playing back both video shows and computer programs. ITVs are no more expensive than our color TVs and are present in 95% of homes as well as offices and other places where people gather. ITVs can be used "in local mode" by connecting to the Open Portal, selecting the material you wish from the library and "down loading" it onto your disk. "On-line mode" is used to maintain the connection to the Open Portal for communicating with other people at other terminals, to transfer grades and progress reports of "local" work to the administrative department, to access the numerous data banks of information (including schedules of upcoming classes), and to use the larger computer and printers located at the Open Portal center.

School - A Meeting of Minds

It is the Open Portal facility that has contributed most to a radical change in the picture of a "school". A "school" is now an administrative unit, a system of organizing people into groups of similar age, educational need, and interest. A school is now a meeting of minds, not a gathering of bodies. To be "at school" is to "log" your current educational activity with the

administration through the Open Portal. A 3-year-old could be "at school" while playing ABC video games on the Open Portal at Grandmother's house. A 10-year old "logs on" to woodshop from the terminal in the shop at the former elementary school. He "logs off" when he leaves. A teenager logs on to swim team when he joins his pals for laps at the pool while his sister is attending "Graphic Image Design 306" from the specialized computer terminal at the computer center on campus. Mom, who works at an automated factory across town, often enjoys an Open Portal bridge class during lunch break at work. Dad's job allows him to "telecommute" from home three or four days a week. He logs on to his firm's computer system from home and can handle all correspondence, financial analysis, as well as monitor sales and production progress. When he goes to the office, it is usually to meet other executives face-to-face, to counsel with his staff, or to handle a problem with the physical facilities. When Dad has time for "school", he logs on to a course in midevil history and politics or a geology seminar for ameteur rock hunters. He and the family often spend weekends in the mountains with others from that particular class.

Changing Child Care Patterns

Several sociological changes have resulted from the flexible educational system the Open Portal provides. In 1990, the physical care and custody of children is treated as a concern

separate from their education. Parents may opt to be responsible for 24 hour childcare, as is now common with infants, or they may enroll the children in "care" facilities. Since Open Portal School is equally accessible from both home and "care", education is always available. Many former school buildings are now "care" centers. They offer TLC, socialization, group recreational activities, and personal counseling but do not have direct responsibility for academic progress. This explains the small population of children we noted at the "combined campus". One half of the kids in the neighborhood are at home or "under parental control", a quarter are at "care", this leaves only one quarter of those under 17 on campus or on field trips. Of those on campus, many are engaged in athletics, gardening, and other outdoor activities.

Face-to-Face Curriculum

The "face-to-face" curriculum is another area where the values of the 1980's have been preserved but in a reorganized format. Decisions about what parts of the curriculum to make available through the Open Portal and what to offer on campus are now made by examining subject areas for "informational" and "experiencial" content. Information content, that is, facts, figures, abstract relationships and skills which involve manipulating these things can all be computerized successfully. But direct interpersonal relationships and skill in moving one's

own body or physical objects through the world cannot be learned sitting in front of a screen. Since such experience is considered just as important, although more expensive to offer, as informational subjects. Thus, all children are required to take face-to-face classes in the laboratories, workshops, studios, playfieds, and theatres of each neighborhood campus. Their progress is tracked with just as much care as math, history, or literature. Although to us, these classes and facilities may appear more like a cross between a recreation department and a university, we are told that face-to-face is an equal partner with Open Portal for public education.

Traditional Classroom Options

But not every child works well with the computer medium. Furthermore, many subjects covered "in school" in 1980 just cannot be reduced to a display on a screen. These facts are common knowledge in 1990. Therefore, any child may choose to enroll in a traditional classroom. Since the classroom system has become more expensive than the Open Portal, the Department of Education invests considerable research money in upgrading the computer assisted curriculum each year and Open Portal does work quite well. We saw two types of students in traditional classroom settings: those with emotional or learning disabilities that prevented them from making use of the Open Portal and those who simply enjoy the classroom setting and choose to be there.

Because Open Portal is available to children during the preschool years, those who do not adapt to it are usually identified early and parents are counseled to enroll them in traditional classes.

Problem Children

Problem children are still problems in 1990 but there are fewer of them. Perhaps some who were considered "learning disabled" or "emotionally disturbed" in a previous decade were really only "classroom unable" and they can adapt more comfortably to the current flexible system. Children who are motivated in their academic pursuits by the social milieux of the classroom still have the same opportunity - without the presence of detractors. This element of voluntary presence in a traditionally structured classroom contributed to the relaxed and cooperative spirit we noticed.

CHANGING TEACHER ROLES

Of course, the role of "tea her" has changed along with the rest of the educational system. Administrative specialists handle 90% of school record keeping and all teachers have word processors and data base management programs to aide with their end of the bargin. All objective testing is scored automatically and "Spelling Checkers" leave teachers free to attend to the structure and content of their students' essays and reports.

Teachers usually specialize in "care", "face-to-face", "Open Portal", "counseling", or "curriculum development".

Care teachers focus on social development, interpersonal skills, making sure children have access to Open Portal terminals and get to their face-to-face classes.

Open Portal teachers are age and content specialists who often work from their terminals at home. They monitor the work of the students in their "classes", send and receive comments by electronic mail, and often use the "talk feature" of the system to answer an immediate question. Much of their time is spent in "on-line conferencing" where all students in a class log on to the Open Portal at the same time and hold a group discussion. One advantage of this procedure is that each participant in such a conference receives a transcript of the whole discussion to study, abstract, or throw out as he chooses. Since one can attend from anywhere, home, work, "care", or even the public library scheduling of such an event need not take transportation into account.

Both counseling and curriculum development are now considered to be "teaching specialties" rather than adjunct services and, without which, education would be seriously impoverished.

CONCLUSION

It is time to leave this school of the future and return to our own time and technology. Whether or not you like the vision you have just seen, there is one fact you should understand right now. All of the technology necessary to bring such a school into existence can be purchased **TODAY**. Today, it is too expensive to be practical, but prices are decreasing approximately 25% per year.

Today the curriculum we need for the Open Portal is just beginning to be developed. But we do know a great deal about how to do it and pilot projects could be started now. We are lacking two things, today. First, few people have addressed the information/experience analysis of our curriculum, so we are in danger of making major mistakes about what to computerize and what to continue to do face-to-face. Second, we have yet to discard our notion of a school as a place. We are still tied to buildings, seat counts, and custodial care as symbols of school. When we are ready to embrace a new vision, 1990 can be just around the corner.